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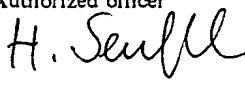
INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 99234	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/ES 99/ 00279	International filing date (day/month/year) 27/08/1999	Priority date (day/month/year) 22/07/1999
International Patent Classification (IPC) or national classification and IPC B01D53/22		
Applicant DAVID SYSTEMS TECHNOLOGY, S.L et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consists of a total of _____ sheets.

3. This report contains indications relating to the following items:
- I ☒ Basis of the report
 - II ☐ Priority
 - III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☐ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☒ Certain defects in the international application
 - VIII ☒ Certain observations on the international application

Date of submission of the demand 22/02/2001	Date of completion of this report 29. 11. 01
Name and mailing address of the IPEA/  European Patent Office D-80298 Munich Tel. (+49-89) 2399-0, Tx: 523656 epmu d Fax: (+49-89) 2399-4465	Authorized officer  H. Senft



I. Basis of the report

1. This report has been drawn up on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*

☒ the international application as originally filed

☐ the description, pages , as originally filed
pages , filed with the demand
pages , filed with the letter of

☐ the claims, Nos. , as originally filed
Nos. , as amended under Article 19
Nos. , filed with the demand
Nos. , filed with the letter of

☐ the drawings, sheets / fig. , as originally filed
sheets / fig. , filed with the demand
sheets / fig. , filed with the letter of

2. The amendments have resulted in the cancellation of:

☐ the description, pages:
☐ the claims, Nos.
☐ the drawings, sheets / fig.

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2 (c)).

4. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application,
- ☒ claims Nos. 1 and 2

because:

- ☐ the said international application, or the said claims relate to the following subject matter which does not require an international preliminary examination (*specify*): Nos.
- ☒ the description, claims or drawings (*indicate particular elements below*) or said claims are so unclear that no meaningful opinion could be formed (*specify*): Nos. 1 and 2
- ☐ the claims, or said claims are so inadequately supported by the description no meaningful opinion could be formed. Nos.
- ☐ no international search report has been established for said claims Nos.

1. The products of claims 1 and 2 are characterised in terms of process features of the modification method (e.g. type and concentration of solvents and gases) that cannot be determined at the modified product. The appropriate format for this type of invention would be process claims.
2. It remains unclear which modification steps are in fact essential: The products of Table I apparently have not been treated with an "urethanosiloxane" and hence are outside the ambit of claim 1. From page 10, line 5 it appears that the membranes are to be treated with "urethanosiloxane" and/or HF/F₂.
3. It is also unclear why the claims are limited to using a specific alcohol. In fact another alcohol (isoamyllic) is referred to on page 8, line 14.

4. The meaning of "urethanosiloxane" is not clear. Obscurity is further aggravated by the fact that the only example given is "siloethane" (cf. page 9, line 1) which does not make sense from a chemical point of view.
5. According to claim 2 the concentration of ($F_2 + HF$) is in the range of 0-90% by volume, whereas page 8, line 16 in this respect refers to the inert gas (which would, in fact, make more sense).
6. In case the Applicant (without introducing added subject-matter) were to file clarified claims for which an examination on the merits is possible, presumably the most pertinent document of the International Search Report would be US-A 4828585 ("D1").

D1 is also concerned with the problem of improving the selectivity of membranes (such as hollow fibre membranes). e.g. made of polyethersulfone (cf. Example 2), for separation of CO_2 from CH_4 . According to D1 the membranes are modified with a gaseous mixture comprising F_2 . There is no explicit disclosure in D1 of the following features:

- (a) treatment of the membrane with a liquid solvent mixture (it is to be noted, however, that alcohols and dimethyl formamide are conventional solvents/~~non-solvents~~ for the manufacture of membranes by phase separation process);
- (b) use of HF (however, HF will inevitably be formed in situ during the process of D1).

The technical relevance of features (a) and (b) is not explained in the present application, i.e. it remains unclear what technical problem is solved by these potentially distinguishing features.

VII. Certain def cts in the international application

The following defects in the form or contents of the international application have been noted:

There are several misprints and grammatical mistakes in the claims and the description.

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. The poor translation from the original Spanish document introduces many obscurities, e.g:
 - "chemical product" on page 1, line 7 (all gases in question are "chemical products");
 - "behavioural waste" on page 1, line 22;
 - "before the 40% flow of oxygen" on page 2, line 6;
 - "installations with just one aim" on page 2, lines 13 and 14;
 - "The majority have chosen the method of membranes" on page 3, line 15;
 - "C₃ and heavy" on page 6, line 14;
 - "a hollow fibre of initial gas separation" on page 7, line 3;
 - "is treated by pervaporation" in all Examples.
2. If the features of page 8, lines 15-17 are in fact essential, they should be included in claim 1; if not, they should be qualified as optional or preferred.
3. The expression "(F₂ - HF)" in claim 2 is obscure.